What is claimed is:

1. A water treatment and recycling system for use in providing grey water and clear water to a stone processing system including crystal clear water stone fabrication equipment requiring crystal clear water for operations on stone and grey water stone fabrication equipment capable of using grey water in for operations on stone, comprising:

a waste water storage tank connected from the waste water discharge ports of the grey water equipment and of the crystal clear water stone fabrication equipment for receiving and storing the waste water,

a grey water supply loop, including

a grey water pump connected from the waste water storage tank for pumping waste water from the waste water storage tank as grey water to an input port of a grey water tool, and

a crystal clear water supply loop, including

an air pump for pumping waste water from the waste water storage tank,

a high pressure filter connected from the filter pump for filtering particulate matter from the waste water to convert the waste water into the crystal clear water,

a crystal clear water storage tank connected from discharge passages of the high pressure filter for receiving and storing the crystal clear water, and

a crystal clear water supply pump connected from the crystal clear water storage tank for pumping crystal clear water from the crystal clear water storage tank and to an input port of a crystal clear water tool.

2. The water treatment and recycling system of claim 1, further comprising:

a crystal clear water sterilization loop, including

a sterilization device connected from an output port of the crystal clear water supply pump for receiving and sterilizing at least a portion of the crystal clear water stored in the crystal clear water storage tank and connected to an input port of the crystal clear water storage tank for returning the sterilized crystal clear water to the crystal clear water storage tank.

3. The water treatment and recycling system of claim 1, further comprising:

a plurality of float switches mounted at selected levels in the waste water storage tank and in the crystal clear water storage tank for indicating waste water levels

in the waste water storage tank and crystal clear water levels in the crystal clear water storage tank, and

control circuits connected from the float switches in the waste water storage tank and in the crystal clear water storage tank and from a use control panel and proving control outputs to the grey water supply pump, the filter pump and the crystal clear water supply pump for enabling operation of the grey water supply pump, the filter pump and the crystal clear water supply pump dependent on the waste water level in the waste water storage tank and the crystal clear water level in the crystal clear water storage tank.

4. The water treatment and recycling system of claim 1 wherein the high pressure filter comprises:

a frame holding a filter stack including a head plate, a plurality of filter plates, an tail plate and a ram for applying axial pressure along the filter stack to force the head plate, the filter plates and the tail plate into a pressure tight assembly,

the head plate and each of the filter plates including

an axial input bore connecting sequentially along the filter stage to form an axial input passage for receiving waste water from the waste water storage tank, and

a plurality of discharge bores located circumferentially around the axial input passage to form a corresponding plurality of discharge passages extending along the length of the filter stack, the discharge passages being connected to one another outside of the head plate and to the crystal clear water storage tank, and

each of the filter plates further including

at least one filter chamber for containing and supporting active filter elements, each filter chamber being connected between the axial input passage and each of the plurality of discharge passages and the active filter elements removing particulate matter from the waste water flowing along the input passage to provide the crystal clear water discharged through the discharge passages, and

the tail plate being located at the opposite end of the filter stack from the head plate and terminating the input passage and the discharge passages.

5. The water treatment and recycling system of claim 4, wherein the active filter elements comprise:

a filter Media extending across a filter chamber in a flow path between the input passage and the discharge passages communicating with the filter chamber, and

a granular filter layer coated upon and supported by the filter Media for removal of particulate matter from the waste water, the granular filter layer being located in the flow path from the input passage to the discharge passages on the input passage side of the filter Media.

6. The water treatment and recycling system of claim 4, further comprising:

in each filter plate,

a filter chamber gasket circumferentially surrounding at least one filter chamber to seal the at least one filter chamber to a next sequential one of a filter plate, the head plate and the tail plate, and

a discharge bore gasket circumferentially surrounding each discharge bore on one face of the filter plate to seal each discharge bore to a next sequential one of a filter plate, the head plate and the tail plate.

7. A high pressure filter for removing particulate matter from waste water from at least one stone processing tool and providing crystal clear water to at least one stone processing tool, comprising:

a filter frame holding a filter stack including a head plate, a plurality of filter plates, an tail plate and a ram for applying axial pressure along the filter stack to force the head plate, the filter plates and the tail plate into a pressure tight assembly,

the head plate and each of the filter plates including

an axial input bore connecting sequentially along the filter stage to form an axial input passage for receiving waste water from the waste water storage tank, and

a plurality of discharge bores located circumferentially around the axial input passage to form a corresponding plurality of discharge passages extending along the length of the filter stack, the discharge passages being connected to one another outside of the head plate and to the crystal clear water storage tank, and

each of the filter plates further including

at least one filter chamber for containing and supporting active filter elements, each filter chamber being connected between the axial input passage and each of the plurality of discharge passages and the active filter elements removing

particulate matter from the waste water flowing along the input passage to provide the crystal clear water discharged through the discharge passages, and

the tail plate being located at the opposite end of the filter stack from the head plate and terminating the input passage and the discharge passages.

8. The high pressure filter of claim 7, wherein the active filter elements comprise:

a filter Media extending across a filter chamber in a flow path between the input passage and the discharge passages communicating with the filter chamber, and

a granular filter layer coated upon and supported by the filter Media for removal of particulate matter from the waste water, the granular filter layer being located in the flow path from the input passage to the discharge passages on the input passage side of the filter Media.

9. The high pressure filter of claim 7, further including:

in each filter plate,

a filter chamber gasket circumferentially surrounding at least one filter chamber to seal the at least one filter chamber to a next sequential one of a filter plate, the head plate and the tail plate, and

a discharge bore gasket circumferentially surrounding each discharge bore on one face of the filter plate to seal each discharge bore to a next sequential one of a filter plate, the head plate and the tail plate.

10. A method for supplying grey water and crystal clear water to a stone processing system including crystal clear water stone fabrication equipment requiring crystal clear water for operations on stone and grey water stone fabrication equipment capable of using grey water in for operations on stone, comprising the steps of:

receiving and storing waste water from waste water discharge ports of the grey water equipment and of the crystal clear water stone fabrication equipment in a waste water storage tank,

providing grey water to an input port of a grey water tool through a grey water supply loop,

pumping waste water from the waste water storage tank and to an input port of a grey water tool as grey water, and

providing crystal clear water to the crystal clear water stone fabrication equipment through a crystal clear water loop by

pumping waste water from the waste water storage tank and to a high pressure filter,

filtering the waste water into crystal clear water by filtering particulate matter from the waste water in the high pressure filter,

receiving and storing the crystal clear water from the high pressure filter in a crystal clear water storage tank, and

pumping crystal clear water from the crystal clear water storage tank and to an input port of a crystal clear water tool.

11. The method of claim 10, further comprising the steps of:

diverting at least a portion of the crystal clear water stored in the crystal clear water storage tank through a sterilization device connected from an output port of the crystal clear water supply pump, and

returning the sterilized crystal clear water to the crystal clear water storage tank.

12. The method of claim 10, further comprising the steps of:

sensing the waste water level in the waste water storage tank and the crystal clear water level in the crystal clear water storage tank by means of a plurality of float switches mounted at selected levels in the waste water storage tank and in the crystal clear water storage tank, and

generating control outputs to the grey water supply pump, the filter pump and the crystal clear water supply pump to enable operation of the grey water supply pump, the filter pump and the crystal clear water supply pump dependent on the level of waste water in the waste water storage tank, the level of crystal clear water in the crystal clear water storage tank, and user inputs from a control panel.

13. The method of claim 10, further including the preliminary steps of:

assembling a filter stack including a head plate, a plurality of filter plates and an tail plate in a filter frame,

applying axial pressure along the filter stack to force the head plate, the filter plates and the tail plate into a pressure tight assembly,

supplying waste water under pressure into a waste water input passage of the filter stack wherein

the head plate and each of the filter plates include

an axial input bore connecting sequentially along the filter stage to form an axial waste water input passage for receiving waste water from the waste water storage tank, and

passing the waste water through each of at least one filter chamber in each of the filter plates,

each filter chamber containing and supporting active filter elements for removing particulate matter from the waste water to convert the waste water into crystal clear water, each filter chamber being connected between the axial waste water input passage and each of a plurality of discharge passages,

collecting the crystal clear water in each of the discharge passages and passing the crystal clear water in the discharge passages through the head plate and to an input port of the crystal clear water storage tank, wherein

the head plate includes a waster water input port connected from and waste water storage tank and to the input passage of the filter stack and a plurality of discharge ports, each discharge port being connected to a corresponding discharge passage of the filter stack, and

the tail plate being located at the opposite end of the filter stack from the head plate and terminating the input passage and the discharge passages.

14. The method of claim 13, wherein the active filter elements include:

in each filter plate,

a filter Media extending across a filter chamber in a flow path between the input passage and the discharge passages communicating with the filter chamber, and

a granular filter layer coated upon and supported by the filter Media for removal of particulate matter from the waste water, the granular filter layer being located in the flow path from the input passage to the discharge passages on the input passage side of the filter Media.

15. The method of claim 13, wherein each filter plate includes:

a filter chamber gasket circumferentially surrounding at least one filter chamber to seal the at least one filter chamber to a next sequential one of a filter plate, the head plate and the tail plate, and

a discharge bore gasket circumferentially surrounding each discharge bore on one face of the filter plate to seal each discharge bore to a next sequential one of a filter plate, the head plate and the tail plate.

16. A method of removing particulate matter from waste water from at least one stone processing tool and providing crystal clear water to at least one stone processing tool, comprising the steps of:

receiving and storing waste water from waste water discharge ports of the at least one stone processing tool in a waste water storage tank,

pumping waste water from the waste water storage tank and to a high pressure filter under pressure,

filtering the waste water into crystal clear water by filtering particulate matter from the waste water in the high pressure filter,

receiving and storing the crystal clear water from the high pressure filter in a crystal clear water storage tank, and

pumping crystal clear water from the crystal clear water storage tank and to an input port of a stone processing tool, wherein

the high pressure filter includes a filter stack including a head plate, a plurality of filter plates and an tail plate, wherein

the head plate and each of the filter plates include

an axial input bore connecting sequentially along the filter stage to form an axial input passage for receiving waste water from the waste water storage tank, and

a plurality of discharge bores located circumferentially around the axial input passage to form a corresponding plurality of discharge passages extending along the length of the filter stack, the discharge passages being connected to one another outside of the head plate and to the crystal clear water storage tank, and

the tail plate is located at the opposite end of the filter stack from the head plate and terminating the input passage and the discharge passages.

17. The method of claim 16, wherein the active filter elements comprise:

a filter Media extending across a filter chamber in a flow path between the input passage and the discharge passages communicating with the filter chamber, and

a granular filter layer coated upon and supported by the filter Media for removal of particulate matter from the waste water, the granular filter layer being located in the flow path from the input passage to the discharge passages on the input passage side of the filter Media.

18. The method of claim 16, wherein:

each filter plate includes,

a filter chamber gasket circumferentially surrounding at least one filter chamber to seal the at least one filter chamber to a next sequential one of a filter plate, the head plate and the tail plate, and

a discharge bore gasket circumferentially surrounding each discharge bore on one face of the filter plate to seal each discharge bore to a next sequential one of a filter plate, the head plate and the tail plate.

19. The method of claim 16, further including a method for cleaning the filter stack of accumulated waste particulate matter, comprising the steps of:

forcing air into the filter stack through a discharge passage to force air to flow through the filter chambers and the active filter elements to and through the input passage to force water from particulate waste matter captured by the active filter elements,

releasing axial pressure on the filter stack to permit separation of the head plate, the filter plates and the tail plate,

scraping the particulate waste matter captured by the active filter elements and a granular filter layer containing the captured particulate waste matter from the surface of a filter Media,

flushing captured particulate waste matter from the surface of the filter Media by means of a high pressure water hose system,

reassembling the head plate, the filter plates and the tail plate into a filter stack and restoring the axial pressure on the head plate, the filter plates and the tail plate to force the filter stack into a pressure tight assembly,

flushing crystal clear water through the filter stack in a reverse direction to flush residual waste matter from the filter stack by forcing crystal clear water into the discharge passages to flow through the filter plates and out the input passage, and

restoring the granular filter layer coating to each filter Media.

20. The method of claim 19 further including a method for coating a granular filter layer onto each filter Media, comprising the steps of:

pumping a mixture of crystal clear water and a granular material comprising the granular filter layer into the input passage of the filter stack to flow through each filter Media of each filter plate and through the discharge passages from the filter stack, and

recirculating the crystal clear water returned from the discharge passages of the filter stack and replenishing the granular material mixed into the crystal clear water until a desired thickness of the granular material is deposited on the each filter Media of each filter plate.

21. The method of claim 10 wherein each filter plate includes a filter Media coated with a granular filer layer for filtering the particulate waste matter from the waste water to convert the waste water into crystal clear water, further comprising a method for depositing a granular filter layer on each filter Media, comprising the steps of:

pumping a mixture of crystal clear water and a granular material comprising the granular filter layer into the input passage of the filter stack to flow through each filter Media of each filter plate and through the discharge passages from the filter stack, and

recirculating the crystal clear water returned from the discharge passages of the filter stack and replenishing the granular material mixed into the crystal clear water until a desired thickness of the granular material is deposited on the each filter Media of each filter plate.